Alberta Energy Regulator

Directive 007

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Volumetric and Infrastructure Requirements

The Alberta Energy Regulator (AER) has approved this directive on February 17, 2016.

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1 Introduction

1.1 Purpose of this Directive

This directive sets out the Alberta Energy Regulator's (AER) requirements for reporting volumetric data for wells, pipelines, and facilities and well status changes using Petrinex (Canada's Petroleum Information Network). Under Part 12 of the *Oil and Gas Conservation Rules*, each oil and gas licensee or operator in Alberta must file a record of the monthly activities at a well, facility, or pipeline with the AER. Part 12 specifies that the records must be kept and filed in accordance with *Directive 007*.

Gathering this data allows the AER to track production from wellhead to market so that it can maintain an accurate historical record of each well's hydrocarbon and by-product production. The data collected are used in various ways, such as for calculating and verifying royalties, assessing production operations, and preparing statistical reports on supply and market demand for the production of oil, gas, and other energy products.

1.1.1 *Manual 011: How to Submit Volumetric Data to the AER*

Guidance on how to submit volumetric data required by the AER through Petrinex is within *Manual 011: How to Submit Volumetric Data to the AER*, available on the AER website at www.aer.ca.

1.1.2 Petrinex

Petrinex is a shared, interactive, secure database accessed through the internet. It facilitates the exchange of data among upstream oil and gas industry partners and among industry and the Alberta Ministry of Energy. As a central source of all volumetric data, Petrinex's web-based interface gives users online access to information. The data submitted to Petrinex are subject to system controls and front-end editing procedures before they are finally posted to Petrinex. Front-end editing immediately identifies discrepancies for the submitting operator so that corrections can be made before final posting.

Each operator has its own method for submitting data to Petrinex, which is controlled through the operator's user security administrator (USA). For details, see the Petrinex Training System Module available under the resource centre on the Petrinex website, www.petrinex.ca.

1.2 AER Requirements

Following AER requirements is mandatory for the responsible duty holder as specified in legislation (e.g., licensee, operator, company, applicant, approval holder, or permit holder). The term "must" indicates a requirement, while terms such as "should," "recommends," and "expects" indicate a recommended practice.

Each AER requirement is numbered.

The AER encourages all duty holders to be proactive by monitoring their compliance with AER requirements. If a duty holder identifies a noncompliance, it should inform the AER of the noncompliance.

Information on compliance and enforcement can be found on the AER website.

1.2.1 Submission Deadlines

The operator of an active facility or pipeline or one that during the preceding month had activities or was shut in for the entire month must report to the AER through Petrinex by the 18th day of the month, or if the 18th is not a business day, the next business day or as otherwise directed by the AER. The deadlines for AER volumetric data are published under the calendar tab on the Petrinex website at www.petrinex.ca.

Amended volumetric submissions are subject to a closed five-year reporting period.

1.2.2 Fees

To address the costs and quality issues caused by late submissions and data discrepancies in reporting volumetric data, the AER has a schedule of fees in the *Oil and Gas Conservation Rules*, Part 17, Schedule of Fees. The AER may issue a volumetric deficiency invoice to an operator for

missing data or data discrepancies that are not corrected before a filing deadline. For a complete list of error messages and associated fees, see the AER Error Message Identifier Description and Associated Fee table on the AER website, www.aer.ca.

1.2.3 Review of a Notice of Noncompliance (Volumetric Deficiency Invoice)

Licensees may request that the AER Production Data Services team review a volumetric deficiency invoice.

- Requests must be submitted within 15 calendar days of the invoice date.
- Licensees will receive the results of a review within 10 calendar days from making the request.

Use the AER invoice review template, available on the *Directive 007* webpage, when making your request. Send requests for review by e-mail to pa.help@aer.ca, fax to 403-297-7303, or mail to the AER at the attention of the manager of AER Production Data Services, Information Management Branch, at Suite 1000, 250 – 5 Street SW, Calgary, Alberta T2P 0R4.

1.3 What's New in this Edition

In this edition of *Directive 007*, all references to *Directive 019: Compliance Assurance*, which has been rescinded, and related information have been removed.

2 Requirements

An accurate report of the preceding month's activities, products, and volumes associated with the operation of the facility or pipeline includes the requirements below.

2.1 Well Information

1) The licensee of a well must notify the AER through Petrinex of a change in well status within 14 days of the change in well status or before it submits volumetric data, whichever comes first.

2) A licensee of a well must notify the AER of the following changes:

   a) the date on which products are produced during drilling and completing operations (such as swabbing or drillstem tests [DSTs]);

   b) the date on which well testing or other operations took place before a crude oil or crude bitumen well produced oil, before a gas well was placed on regular gas production, or before an injection or disposal well was placed on regular injection or disposal;

   c) the date on which the crude oil or crude bitumen well first produced oil or the date on which the gas well was placed on regular gas production, with the exception of swabbing and DSTs;

   d) the date on which the well was placed on regular injection or disposal;

e) the date on which a well's production, injection, or disposal operations were suspended;

f) the date on which a well's production, injection, or disposal operations resumed after a suspension;

g) the date on which commingled production first occurred from an oil- or gas-producing well at which commingling of two or more zones occurs; and

h) the date on which any other change in status of a well occurred.

3) For approval to change a well's status from "Oil" to "Gas" or vice versa, a licensee of a well must apply to the AER's Reserves Group.

4) A licensee of a well must ensure that all inactive wells are suspended in Petrinex and in accordance with *Directive 013: Suspension Requirements for Wells*.

2.1.1 Well-to-Facility Links

1) The licensee of a well with an active well status must link the well to an appropriate reporting facility identifier (ID).

Well-to-facility links are completed in Petrinex. Well-to-facility links are done using one of the two following methods, depending on whether it is associated with a well status change:

- For link changes associated with a well status change, the edit well status process is used to identify the new facility link. The start date of the well-to-facility link will default to the well status date. An exception to this method is when the well status date is before Petrinex implementation, in which case the well-to-facility link is October 1, 2002.
- For link changes that are not associated with a well status change (e.g., when changing from a single battery to a multiwell battery), the "request well-to-facility link change" process is used.

A producing well may only be linked to one facility ID at a time. An injection well may only be linked to one injection facility ID at a time. Some active well statuses require linking a well to two facilities. Cyclical, steam-assisted gravity drainage (SAGD), and storage wells are linked to both a battery and an injection facility and are reported at one or both the injection facility and the battery each month, depending on the activity.

2.1.2 Commingling

Directive 065: Resources Applications for Oil and Gas Reservoirs sets out the processes and application requirements for wells that are completed in more than one pool to produce without downhole segregation (commingled production).

1) An operator/licensee must

   a) report commingled production from all pools as a total volume to one well event, and

   b) update the well status through Petrinex for the well event that will be reporting production in order to identify the well events involved in the commingling.

All commingled well events will have a common gross completion interval, commingled pool code, and start date of the well status. A well event reporting production will have a "Producing" status. Well events involved in the commingling but not reporting production will have their well status changed to "Commingled".

However, in certain instances, the AER may approve commingling on the basis that production continues to be allocated to individual pools and that this allocation is based on prescribed percentages. When this is required, the AER will identify the percentages to be used when allocating the total production to individual pools.

2) Where the AER has approved commingling with a percentage allocation back to each individual pool, the operator/licensee must

   a) not change the well status to "Commingled" and

   b) report production for each well event separately based on the prescribed percentage in the commingling approval.

2.1.3 Well Volumetric

1) The operator of the well must report to the AER through Petrinex by the 18th day of each month or if the 18th is not a business day, by the next business day or as otherwise directed by the AER if during the preceding month an active well

   a) tested, produced, or received crude oil, condensate, crude bitumen, gas, water, or other substance;

   b) had crude oil, gas, solvent, water, air, or other substance injected or disposed of; or

   c) was shut in for the entire preceding month.

2) An accurate report of the preceding month's particulars of activities, hours, products, and volumes associated with the testing, production, injection, and disposal operations at the wells must include

   a) the volumetric amounts of crude oil, condensate, crude bitumen, gas, water, or other substance produced from the well;

   b) the volumetric amounts of oil, gas, solvent, water, air, or other substance injected or disposed of into the well;

c) the number of hours during which the well was tested or produced, was injected, or was used for disposal purposes;

d) the volumetric amounts of sulphur emissions at the well;

e) the volumetric amounts of gas flared, vented, or used for fuel at the well;

f) the shut-in activity if the well was shut in for the entire preceding month; and

g) any further particulars the AER may require.

2.1.4 Well Activity

1) The operator of a facility that has an active well status must

   a) submit an accurate report of all activities, products, volumes, and product movements for each active well;

   b) continue to submit an activity for the well until the well status is changed to a non-active well status and the well is not producing, injecting, or disposing; and

   c) report the gas that was produced at a facility when oil production is reported at a crude oil or crude bitumen facility.

2) For a well linked to more than one facility, such as those with a well status of "Cyclical" or "Storage", the operator of the facility must report at one of the facility IDs each month.

3) When a well is linked to a new second facility during the month the operator of a facility must report a well at both facilities.

4) If a well's status from a previous month is changed to an "Active" status retroactively, the operator of the facility must make the required monthly submissions for each missing month from the date the well status is changed.

5) If the classification of a well's volumetric gas well liquid code changes, the operator must submit amendments from the start date of when the change was made.

2.1.5 Concurrent/Consecutive Injection

1) If a well injects more than one product during the month, the operator of the facility must report a concurrent/consecutive injection (CCI) code.

2) If a well injects more than one distinct product consecutively with AER approval, the operator of the facility must report each product injected, along with the hours of injection for that product.

3) If products are injected concurrently and reported separately and AER approval is obtained when the scheme is approved, the operator of the facility must enter the same CCI code on each row and report the hours only once on one of the rows.

2.2 Facility Information

2.2.1 Volumetric Submissions

1) The operator of a facility must report the activity, the product, and the volume received at a facility from a well or facility for every transaction.

2.2.1.1 Amendments to Volumetric Submissions

1) The operator of a facility must submit an amendment as soon as it becomes aware of an error or when advised by the AER of an error in a monthly activity.

The AER will accept or may require an amendment to any monthly activity submitted for the previous five years or as otherwise directed by the AER.

2.2.2 Facility IDs

1) Where a facility is constructed and operated, the licensee or approval holder of the facility must immediately obtain the appropriate facility ID from Petrinex for reporting purposes.

2.2.2.1 Compressor Station Facility IDs

All licensed compressor stations must have a facility ID. Facility IDs for compressor stations are generated automatically by Petrinex upon receipt of a compressor station licence from the AER. This facility ID is used to report fuel, flare, and vent volumes at the nearest reporting facility. A compressor station is not a reporting facility, so a monthly facility volumetric submission is not required.

2.2.2.2 Water Source ID Requests

1) Operators of enhanced oil recovery thermal in situ injection facilities with a new, shallow, unlicensed well or surface water source (river/lake) must request a water source ID through Petrinex. Once the system validates the data, a water source ID is issued.

2.2.3 Facility Change Requests

If details about a facility need to be changed, an operator of a facility may update the changes through Petrinex. Changes can be made to the facility name, steam quality percentage, and meter station to pipeline link using the "Edit Facility Information" screen in Petrinex. The facility type and subtype cannot be changed because the facility type is part of the facility ID.

2.2.4 Facility Operational Status

A facility's operational status is the status of the facility for a specific period of time. The most common statuses used are "Active" and "Suspended." Each time the status is changed, a history of the previous status is kept. The facility operational status is used when checking for missing volumetric data. Missing volumetric data is subject to noncompliance consequences.

1) If the facility is active, its operator must report volumetric submissions monthly.
2) The operator of a facility must ensure that the facility has the correct operational status.
3) If a retroactive facility operational change is required, the operator of the facility must ensure that a volumetric submission is completed.

When the status of a facility is "Active", regardless of whether it's made active retroactively, a submission of volumetric data is required in order to avoid noncompliance fees. When the status of a facility is "Abandoned", no submission of volumetric data is required.

2.2.5 Facility Operator Changes

1) If the operator of a facility changes, the operator of record must request a facility operator change before the 18th day of the month or if the 18th is not a business day then the next business day, or as otherwise directed by the AER.

The new operator will not be able to submit volumetric data to Petrinex until the change in operator has been updated in Petrinex via the concurrence process. The operator of record will remain responsible for any volumetric submissions until the new operator accepts the notification.

2.2.6 Corporate Amalgamations

1) Where the operator of record's business associate (BA) ID is amalgamated into another BA ID, the operator of record must submit a request for a facility operator change using the operator of record's BA ID before the 18th day of the month, or if the 18th is not a business day then the next business day, or as otherwise directed by the AER.

The new operator of record of the affected facilities does not have to be the successor in the amalgamation; however, only BAs with an "Active" status in Petrinex can be selected as the next operator of the facilities.

2.3 Facility/Pipeline Information

1) By the 18th day of the month, or if the 18th is not a business day the next business day, or as otherwise directed by the AER, the operator of the facility or pipeline must accurately report

a) the particulars of the crude oil, synthetic crude oil, gas, marketable gas, ethane, propane, butanes, natural gas liquids, helium, sulphur products, crude bitumen, water, waste products, and other substances purchased, received, processed, disposed of, and sold;

b) the particulars of the source from which the component, product, and substance listed in requirement 1(a) were received or processed;

c) the particulars of the volumetric amount from each source for each component, product, and substance listed in requirement 1(a);

d) the particulars of the inventories, disposition, and delivery destinations of all components, products, and substances received, processed, and recycled listed in requirement 1(a);

e) the particulars of disposition when product leaves the province;

f) the particulars of fuel gas flared, vented, and used;

g) the volumetric amount of sulphur emissions at the facility;

h) the SHUTIN activity if the facility or pipeline was shut in for the entire preceding month; and

i) any further particulars the AER may require for a particular facility or pipeline.

An accurate report of all activities, products, volumes, and product movements must be submitted for each active facility.

2) Where a facility has an "Active" status and has opening inventory but was shut in for the entire month, the operator of the facility must make a volumetric submission, with the activity closing inventory reported.

Because the opening inventory is auto-populated based on the previous month's closing inventory, it is only pending and is not a submission until an activity is entered.

3) Where a facility has an "Active" status and does not have an opening inventory and is shut in for the entire month, the operator of the facility must make a volumetric submission with the activity reported as "SHUTIN".

2.3.1 Proration Factors

1) If the reporting facility type is a battery (BT) with a facility subtype of proration and the well production activities are reported or if the facility type is a custom treater (CT) and receipts are reported, proration factors for oil, gas, and water must be reported for each product.

2.3.2 Inventory

If a facility had closing inventory (INVCL) from the previous month, the facility opening inventory (INVOP) product and volume for the current month will be auto-populated by Petrinex for the facility. At the AER filing deadline (18th day of the month or if the 18th is not a business day the next business day, or as otherwise directed by the AER), Petrinex will roll over all closing inventory volumes to the next month's opening inventory and be ready for the next month's volumetric submission. The operator of the facility will never be able to enter the opening inventory activity, nor will the operator of the facility be able to change a volume that was auto-populated by Petrinex for the facility.

If amendment occurs for a previous month and the amendment changes the closing inventory volume, Petrinex will create a pending volumetric submission for the next month with the changed opening inventory volume. The facility operator is also required to submit an amendment for this month.

At Petrinex implementation, the AER populated the October 2002 opening inventory using September 2002 closing inventories for facility statements received at the AER by October 18, 2002. If changes to your October 2002 opening inventory are required, the operator of the facility must balance the facility using the inventory adjustment activity (INVADJ).

2.3.3 Receipts and Dispositions

In most cases, deliveries to another facility must be reported as a receipt by the receiving operator of the facility, and a corresponding disposition will be auto-populated by Petrinex at the shipping facility. However, if the reporting facility is a pipeline (PL), meter station (MS), or terminal (TM), there may be situations where the facility operator reports the disposition. If this is the case, a corresponding receipt will be auto-populated by Petrinex for your facility.

Petrinex will flag a facility as "Pending" when the disposition or receipt volumes are auto-populated by Petrinex for the facility. This pending disposition or receipt is not part of the facility submission until the facility operator accepts the pending disposition or receipt, even when the facility operator has completed facility submission and is only waiting for the auto-populated volumes. It is the facility operator's responsibility to ensure that the auto-populated volume is accepted and becomes part of facility submission.

A facility operator cannot modify volumes that have been auto-populated based on another facility's submission. If a facility operator disagrees with a volume, the operator should contact the receiving or disposing facility operator who created the auto-populated volume and request a correction to the volume.

When a volume is disposed of to a non-reporting facility (e.g., out of province), the disposing facility operator must report the disposition.

2.3.4 Balance

Petrinex will run a process that calculates activities, totals individual activities, and balances the facility. When the operator of the facility completes an online edit or queries a facility's volumetric data, the system will run this process automatically so that the current up-to-date balance for the facility is displayed. Operators of a facility will see an online message if problems exist, and they may request that an error (noncompliance) report be run on specific facilities or all facilities. Petrinex will automatically run a balance on all facilities two days before the AER filing deadline and again at the filing deadline to identify facilities in error and/or out of balance.

The run two days before the filing deadline is a facility operator's final notice before the submission filing deadline. Any balance errors not corrected before the filing deadline are subject to AER noncompliance fees. If an operator of a facility submits volumetric data for a facility during this two-day period, the operator should request a noncompliance report to ensure that the final balancing of its facilities is correct.

3 Records Management and Retention

3.1 Wells

1) The licensee of a well that is producing, injecting, or disposing or is capable of producing, injecting, or disposing must keep at its field office or other place of business in Alberta a daily record of the operations of the well for a period of one year in a form satisfactory to the AER.

2) The licensee of a well must ensure that the record includes the original recording of measurements used to determine the particulars for the record and must demonstrate

   a) the volumetric amounts of crude oil, condensate gas, natural gas liquids, crude bitumen, water, air, steam, and any other component, product, and substance produced and reproduced from, injected, or disposed of into the well;

   b) the source from which the products and substances listed in requirement 2(a) above were obtained;

   c) the particulars of any treatment to which the products were subjected and average separator or treater pressures if in use;

   d) the total number of hours of production, injection, and disposal of each product or substance during each month; and

   e) any further particulars the AER may require.

3.2 Facilities and Pipelines

1) An operator of a facility or a licensee of a pipeline must keep at its field office or other place of business in Alberta for a period of one year a daily record of crude oil, synthetic crude oil, gas, marketable gas, ethane, propane, butanes, natural gas liquids, helium, crude bitumen, sulphur products, water, waste products, and any other component, product, or substance, that includes

   a) a list of the products and substances purchased or received into the facility;

   b) particulars of the source from which the products and substances were received;

   c) particulars of the price payable, quantity, and quality of the products and substances received from each source;

   d) particulars of the inventories, consumption, disposition, and delivery destinations for all the products and substances received, refined, processed, and sold;

   e) particulars of the deliveries of all sales to retail distributors or for ultimate use within the province, including volumes, number of customers, and classification of customer accounts;

   f) particulars of the amount realized from the sale of the products and substances; and

   g) any further particulars the AER may require.